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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Thomas Schuster

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EXAMINER

PHAM, EMILY P

ART UNIT

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2838

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/584,337	Applicant(s) SCHUSTER ET AL.	
	Examiner EMILY PHAM	Art Unit 2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 6/23/2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, “the converter and the device adapted to sense current and arranged inside the converter” recited in claim 8, “the analog-to-digital converter is integrated in one of a microcontroller and a microprocessor” recited in claim 9 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because the same reference character “2” has been used in FIG 1 and FIG 2 to designate both the microcontroller without analog-to-digital converter (as of the prior art) and the microcontroller with integrated analog-to-digital converter (as of the invention). Different parts should not have the same label. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 8-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zeoni et al (USP 6,356,048) in view of Gritter (USP 4,958,269).

Regarding claim 8: Zeoni et al (**FIG 1a**) discloses a converter (**PO**) (The terms “converter” and “inverter” can refer to the same device, IEEE Dictionary gives definition of inverter as a device used to convert direct current into alternating current. Therefore, in another words, DC-to-AC converter is known as inverter), comprising: a device (**RS**) adapted to sense currents fed to an electric motor (**BLDC**) powered by the converter (**PO**) (the claim language does not specifically limit whether the sensed current is coming from the input or output point of the converter, current goes through the inverter eventually fed to the motor; therefore sensing current through the inverter is the same as sensing current fed to the motor), the device (**RS**) arranged inside the converter (**PO**), an additional filter (**FIG 1c, R3-C1**) that is connected to an analog-to-digital converter (**A/D**). Zeoni et al does not disclose a nonlinear filter. Gritter (**Claim 8**), however, teaches the use of a nonlinear filter in a motor drive control system is well known in the art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the nonlinear filter in the motor control system of Zeoni et al, as taught by Gritter, for the purpose of maintaining the stability in transmitting the motor-dependent current.

Regarding claim 9: Zeoni et al (**FIG 1c; FIG 2; col. 3, lines 45-63**) discloses the analog-to-digital converter (**A/D ch4**) is integrated in one of (a) a microcontroller and (b) a microprocessor (**FIG 2, MC, AD; col. 3, lines 62-63**).

Regarding claim 10: Gritter (**FIG 1**) teaches the nonlinear filter includes a run-up transmitter (**56, 60, 62**).

Regarding claim 11: Gritter (**FIG 1**) teaches the run-up transmitter (**56, 60, 62**) includes a comparator (**56**) and an integrator (**62**).

Regarding claim 12: Zeoni et al (**FIG 1c; col. 3, lines 45-63**) discloses the additional filter includes a low-pass filter (**R3-C1**).

Regarding claim 13: Zeoni et al in view of Gritter discloses the claimed invention except for a value corresponding to a rated current of the converter is attainable for the run-up transmitter in a time between 5 and 10 μ s. It would have been obvious to one having ordinary skill in the art at the time the invention was made to achieve a value corresponding to a rated current of the converter for the run-up transmitter in a time between 5 and 10 μ s, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 14: Zeoni et al in view of Gritter discloses the claimed invention except for the PT1 filter has a time constant having a value one of (a) between 15 and 25 μ s and (b) approximately 20 μ s. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the PT1 filter with a time constant having a value one of (a) between 15 and 25 μ s and (b) approximately 20 μ s, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. It has also been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

Response to Arguments

5. Applicant's arguments with respect to claim 8 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Miller et al (USP 4,514,690) discloses power line field interference rejection for magnetic sensors, and Kinpara et al (USP 6,194,864) discloses control device for induction motor.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EMILY PHAM whose telephone number is (571)270-3046. The examiner can normally be reached on Mon-Thu (7:00AM - 6:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Akm Ullah can be reached on (571) 272 - 2361. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jessica Han/
Primary Examiner, Art Unit 2838
March 2009

EP